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The Global Economic Crisis of 2008: Some Thoughts on Causes and Remedies

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Michael O'Neil
Executive Director
SA Centre for Economic Studies
January 2009

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1. Introduction

The global economic crisis of 2008 had its proximate origins in the US sub-prime mortgage market. Outsiders find it hard to believe that mortgages were granted to borrowers who on the face of it were almost certain to default. How was this possible? In short, it was possible because the process of securitization created a perverse set of incentives for banks, mortgage brokers and rating agencies.

Securitization is the process of bundling mortgages into new securities and selling them to specially created financial firms or entities known as conduits or structured investment vehicles (SIVs). These entities in turn sell these or securities derived from them to other investors. This allowed banks and others to move assets off balance sheet and acquire additional up-front funding with which to make more loans. The credit multiplier was working on overdrive under this business model.

Mortgage brokers working on commission had the incentive to maximise the number of deals but no incentive to monitor quality while banks lost interest in quality once mortgages were securitised and moved off balance sheet. Similarly, rating agencies on commission and competing for market share had the incentive to maximise the number of deals regardless of quality.¹ These developments in the sub-prime mortgage market were merely the tip of the ice-berg and the same process was repeated with credit card debt, other consumer debt and student loans. But more staggering was the development of ‘insurance’ products known as credit-default swaps (CDSs).

Credit-default-swaps as a form of insurance against the default of a counterparty (the party to whom a loan has been made) pose no intrinsic problem. The problem arises when a market for credit-default-swaps is ‘created’ and ‘insurance’ companies take on the role of market makers by selling insurance to any buyer. For in this case the financial system moves onto dangerous and fragile ground. In a ‘market’ for CDSs anyone can buy insurance on entity X even if they have no exposure to entity X, so long as they can find an ‘insurance’ company willing to sell the insurance. In effect everyone in your street can take out insurance on your house. Although the insurance company is happy to take the premiums in ‘good times’, if ‘bad times’ occur and your house burns down the insurance company will find itself with a payout bill many times the value of your property. This, it seems, was what was allowed to happen in the ‘market’ for CDSs in the US and all was well until defaults started to occur and ‘insurance’ payouts ballooned. This ultimately accounted for the demise of American Insurance Group as a key market-maker in CDSs.

Thus rather than allocating risk ‘efficiently’ the business model behind these developments was increasing systemic risk as Rajan (2006, pp. 521-522, emphasis added) cautiously explained:²

¹ Messages between two Standard and Poor’s officials revealed to the US Congress on October 22 2008 referred to a deal as ‘ridiculous’ and claimed that the assessment models used did not even capture half the risk but they nevertheless bragged that “We rate every deal. It could be structured by cows and we would rate it”. Clearly standards had disintegrated. See also the OP-ED column titled ‘All Fall Down’ by Thomas L. Friedman in the *New York Times* of 27 November, 2008. For a comprehensive analysis of the process of securitization, the perverse incentives it encouraged and the ultimate consequences see Wray (2007). An accessible account of the danger of speculation using CDSs can be found in *The Weekend Australian* November 29-30, p. 34 in the article reproduced from the *Wall Street Journal* and titled, “Rumbles trap Morgan in mayhem. On the same page there is a nice piece on Mrs Reiki Mutsi’s foray into the Yen carry trade!

² The process underlying the growth of the ‘shadow-banking’ system is now described as the ‘marketization of finance’ or ‘financialization’ because assets traded in markets were replacing the traditional relationship between banks and clients. For a discussion see Palley (2007) or Borio (2007).

“So on net, what can we say about how the stability of the financial system has evolved as the nature of the system has changed? While the system now exploits the risk bearing capacity of the economy by better allocating risks more widely, it also *takes on more risks than before*. Moreover, the links between markets, and between markets and institutions, are now more pronounced. *While this helps the system diversify across small shocks, it also exposes the system to large systemic shocks – large shifts in asset prices or changes in aggregate liquidity*. The incentive structure of investment managers, as well as intensified competition, may contribute to ‘endogenising’ the large systemic shocks..... – *not only might investment managers have a greater tendency to allow asset price misalignments, they may also have tendency to leave themselves exposed to events ‘in the tail’ of probability distributions, without preparing adequately for them. Tail events may well prompt a flight to quality and liquidity. Unfortunately, traditional providers of liquidity could find it harder to step up at such times.*

While it is hard to be categorical about anything as complex as the modern financial system, *it is possible that these developments are creating more financial-sector pro-cyclicality than in the past. They may also create a greater (albeit still small) probability of a catastrophic meltdown. Unfortunately we won’t know whether these are, in fact, serious worries until the system has been tested.*”

Rajan’s assessment is revealing because although he can see the danger, along with most other economists and finance experts, he seriously underestimated the risks. The system has now been tested – and it failed.

Entities in the so-called ‘shadow-banking’ system, such as monoline insurers and SIVs that grew rapidly as a result of the securitisation process, got into difficulties as asset-backed securities fell in value and threatened to bring down the investment and mainstreet banks that funded them. The process of de-leveraging (reducing borrowing) and the fire-sale of assets that it initiates had international dimensions because many of these asset-backed securities were included in global portfolios - to diversify risk! The potential magnitude of this problem became evident when it was reported in early 2008 that the CDSs market in the United States had a value between \$US50 and \$US60 trillion on underlying assets of only a fraction of that value. Default by the holders of the underlying assets then sent a tsunami of further potential defaults through the insurance industry and the financial ‘markets’ of the ‘shadow-banking’ system and into mainstreet banks. In response global credit markets froze as counterparty risk morphed into uncertainty; in that environment everyone was reluctant to lend and began hoarding ‘cash’. So far it is estimated that the US authorities (the Federal Reserve and the US Treasury) have pumped in \$US3.5 trillion to prevent a collapse of the US banking and financial system and to ‘unfreeze’ credit markets.

In that way, what initially looked like an issue that could be contained to the sub-prime housing market turned into the biggest financial meltdown in living memory.³ That meltdown is now impacting global growth with economies contributing more than 70 per cent of global gross domestic product (GDP) in recession and those larger economies that are not yet in recession, e.g., China and India, cooling fast.

The debacle unfolding in US and other financial markets as deleveraging accelerates and fire sales of assets continue has received much attention in the financial press with a particular emphasis on the bizarre behaviour associated with the sub-prime process and the exorbitant salaries and bonuses paid on Wall Street. But these features are the symptoms and not the cause of the current crisis. To understand what has gone wrong it is necessary to dig a little

³ Cassidy (2008) provides a riveting blow-by-blow account of events and the role played by Bernanke and Paulson.

deeper into the role that monetary and finance theory played and the way it has influenced policy and regulation in financial markets over recent decades. Ultimately, economic policy and regulation is based on economic theory. If that theory is flawed both policy and regulation will ultimately fail. It is the purpose of this note to offer some thoughts on what has gone wrong with monetary and finance theory and how these failings have led to failings in policy and regulation through the political process. ***It is the contention of this paper that the fundamental cause of the current global crisis can be traced to failings in the theory of money and finance.***

These failings have occurred on a global scale, in the sense that they have influenced the behaviour of international institutions like the International Monetary Fund (IMF) and the Bank of International Settlements (BIS) as well as central bankers. Policy failings were also apparent at national levels as the ‘consensus model’ of monetary policy was too narrowly focussed on inflation targeting: for an assessment of the consensus model see Arestis and Sawyer (2005). In addition, the failure to apply the appropriate statistical analysis led to the inability to correctly assess the risks facing institutions and markets in a world of rapid financial innovation.

Finally, the rapid growth in the ‘shadow-banking’ system over the past decade was driven by easy credit which enabled excessive leverage that temporarily validated the highly risky strategies of hedge funds and other financial institutions. As Kindleberger (2005, chapter 4) pointed out with his axiom number two – asset-price bubbles depend on the growth of credit.⁴ So to account for what has gone wrong it is also necessary to account for the supply of ‘easy-credit’ over the last decade. Failures in the theory of money and finance and the measurement of risk are part of the story but the supply of ‘easy-credit’ played its role in contributing to growing financial fragility. The supply of ‘easy-credit’ on global markets is also largely explained by the failure of the IMF to maintain the stability of the international monetary system as required by its mandate.

2. Overview

To make the case that the flaws in ‘conventional wisdom’ on monetary and finance theory are the fundamental cause of the current crisis the rest of the paper is structured as follows.

Section 3 gives an overview of the flaws in the mainstream monetary and finance theory that underpins the consensus model of monetary policy. In the case of monetary theory, central bankers have been lulled into placing too much faith in a model that implies that inflation targeting is sufficient to ensure macroeconomic stability. That this faith was misplaced was suggested by the series of asset-price bubbles and crises that occurred between 1990 and 2008.⁵ These warning signals were largely ignored under the Greenspan doctrine that central banks could do little to prevent asset-price or other speculative bubbles. All that could be done was to clean up the mess after the bubble had burst.⁶ That doctrine ultimately failed in 2008 and explains Greenspan’s state of ‘shocked disbelief’ in the reaction to the current crisis.

⁴ On my paperback copy of Kindleberger’s book there is a telling quote by Paul Samuelson which reads: “Sometime in the next five years you may kick yourself for not reading and re-reading Kindleberger’s *Manias’ Panics and Crashes*.” I guess there is a lot of kicking going on!

⁵ The commercial property boom and bust that followed the 1987 stock market crash set the ball rolling to be followed by the Asian crisis of 1997, the Long Term Capital Management (LTCM) crisis of 1998, the dot-com bubble of 2000-2001 and the housing bubbles of 2002-2007.

⁶ Associated with this view was the argument that it was not possible to detect asset price bubbles or distinguish between changes in fundamentals and bubbles. Shiller (2000) put that argument to rest, yet, as Cassidy (2008) notes, it had no impact on Greenspan and Bernanke.

His doctrine rests on flawed theory. In the case of finance theory, the major flaw is the gross underestimation of risk implied by the use of inappropriate statistical analysis. As Mandelbrot and Hudson (2004, p. 24) explained, that approach would grossly underestimate risk in financial markets and that is exactly what has happened:

“The financiers and investors of the world are, at the moment [2004], like mariners who heed no warnings. This book is such a warning.”

Section 4 explains how the failings in monetary theory, combined with a *laissez-faire* approach to exchange rate policy by the United States, led to the failure by the IMF to act according to its mandate and stabilise the international monetary system. On the contrary, under the influence of the Washington consensus, that *laissez faire* was best, it pushed for the removal of restrictions on all capital flows and allowed countries free reign in choice of exchange rate regime. After the Asian crisis that was seen to be a fundamental mistake. But the lesson was not learnt. Because the IMF bungled the crisis and pushed some Asian economies into deeper recession, several Asian governments foreswore any further IMF ‘assistance’ and took out their own insurance in the form of undervalued exchange rates. Those undervalued exchange rates resulted in growing global imbalances from 2000 to the present and produced a flood of recycled Asian dollars into US Treasury bills that depressed US interest rates. That flood increased to tsunami proportions post 2005 and effectively weakened US (and Australian) monetary policy. This is the source of the easy credit that fuelled the growth of the US ‘shadow-banking’ system. Consequently the Federal Reserve was powerless to reign in the credit bubble that burst in 2008.

Section 5 then outlines what needs to be done to avoid a repeat of 2008. Clearly, if the diagnosis of the cause of the crises presented in sections 3 and 4 is correct fundamental reforms are required. Simply tinkering with existing regulations will not solve the underlying problems. We all know that treating symptoms seldom works. Fortunately, as far as theory goes there is much available outside that contemporary mainstream that can be applied to guide policy. Furthermore, the charters of most central banks already contain a clear statement of objectives of monetary policy and many central banks act in accordance with them in a crisis. Little more than fine tuning may be required there. On the international stage the picture is more complex and unlikely to be quickly resolved. Nevertheless some general principles to guide policy design and regulation can be outlined.

Section 6 concludes by highlighting the change of perspective required by monetary and finance theorists and the implications for regulators and policy makers.

3. Failings in the contemporary theory of money and finance

The shortcomings of contemporary monetary theory can be usefully summarised by reference to two recent papers – one by Buiter (2008) and the other Goodhart (2008).

Buiter (2008, p. 30 fn 9, emphasis added) outlines a fundamental problem with contemporary macroeconomics and monetary theory in the following remarks:

“Macroeconomic theory, unfortunately, has as yet very little to contribute to the key policy issue of liquidity management. The popularity of complete contingent markets models in much contemporary macroeconomics, both New Classical (e.g. Lucas (1975), Lucas and Stokey (1989) and New Keynesian (e.g. Woodford (2003) means that in many (most?) of the most popular analytical and calibrated (I won’t call them empirical) macroeconomic dynamic stochastic general equilibrium models, *the concept of liquidity makes no sense. Everything is perfectly liquid.* Indeed, with complete

contingent markets there is never any default in equilibrium, because every agent always satisfies his intertemporal budget constraint.....*The profession entered the crisis equipped with a set of models that did not even permit questions about liquidity to be asked, let alone answered.*"

The reasons for this parlous state of affairs can be traced to several wrong turns that were taken by theorists in the latter half of the twentieth century and need not detain us here.⁷ What is important is that central bankers, not for the first time and I doubt for the last, have been sold a pup. For the models to which Buiter is referring are those that have been employed to analyse the role of nominal interest rate rules and inflation targeting in most academic studies of the topic. The so-called New Keynesians to whom Buiter refers are the leading exponents in this field but their models are essentially bankrupt when it comes to framing sensible advice to policy makers.⁸ Charles Goodhart (2008, p.14, fn 11) correctly summed up these models when he asked:

"How on earth did central banks get suckered into giving credence to a model which is so patently unsatisfactory?"

Clearly there is something amiss with contemporary monetary theory and the fault lies with the academics not the central bankers. Central bankers are pragmatists subject to political and reality constraints. Inflation clearly is what economists call a 'bad' and relative price stability is a necessary pre-requisite for macroeconomic stability – but it is not sufficient. Central bankers can commit to a policy of price level stability (low inflation) without taking on board all the non-sense embedded in contemporary academic models. But the risk they take is that their policy becomes too narrowly focussed on inflation (this is particularly the case for the European Central Bank) at the expense of the other objectives stated in their charters.⁹ Stability of the financial system is one of those objectives and financial disaster can occur if it is ignored. On the evidence to date it is clear that some central banks, the Federal Reserve stands out, have failed to achieve that objective. One of the fundamental reasons for that failure is the belief in efficient markets that underpins much of the regulatory reform that has been implemented since the early 1980s.

The idea of efficient markets is implicit in the models of complete contingent markets referred to above by Buiter (2008) and employed by monetary theorists – this is where the flaws in monetary theory overlap with the flaws in the theory of finance. An apt and timely illustration of what has gone wrong here is provided in the recent book by Franklin Allen and Douglas Gale (2007) titled *Understanding Financial Crises*.

The theoretical core of the book is provided in chapter 2 titled: *Time, uncertainty and liquidity*. On examination we find that this is a most unsuitable title because the chapter has nothing to say about any of these issues! How can this be? Well, once we realise that the Allen and Gale (2007) analysis exhibits all the properties of the complete contingent claims general equilibrium model described by Buiter the concepts of time, uncertainty and liquidity take on strange properties. Liquidity, as everyone knows, is the property of an asset that enables the asset to be converted into money at short notice without significant loss. By contrast, Allen and Gale (2007, p. 53) define a short term liquid asset as:

"... a storage technology that allows one unit of the good at date t to be converted into one unit of the good at date $t+1$, for $t = 0, 1$ ".

⁷ For a brief overview see Goodhart (2004)

⁸ See Goodhart (2004) and Rogers (2008).

⁹ See Palley (2002)

The reason for this strange definition can be traced to the form of the auction that underpins the model. This form of auction allows for the trade of commodities directly, without the intermediation of money, across time and space.¹⁰ The complete contingent claims general equilibrium model employed by Allen and Gale therefore effectively treats all goods as equally liquid and rules out the possibility of bankruptcy by construction. In short, as Buiter described, it has nothing to say about liquidity. The model is an imaginary non-monetary world that can provide no insights for policy makers and regulators about the management of liquidity in financial markets. This rather confirms the suspicions that too many academic economists are ivory-tower theorists with no understanding of the real world.

The same conclusion applies when we take a closer look at what uncertainty means in the Allan and Gale world. Uncertainty is defined only with reference to a complete description of the states of nature to which a probability is attached. There are two difficulties with this approach. First, it is impossible to give a complete probabilistic description of the future. Both Frank Knight (1933) and Keynes (1936) made that point clear but it is ignored by today's leading theorists. Second, even if we are prepared to ignore the uncertainty of Knight and Keynes, the statistical theory that underpins contemporary monetary and finance theory is known to be a special case. It reflects a Gaussian view of the world that requires economic outcomes to be independent and normally distributed. But as Mandelbrot and others have been arguing for some time, economic and financial data do not conform to the Gaussian vision of the world. The practical consequence of this distorted vision is that much of contemporary finance theory grossly underestimates the risk in financial markets.

As Mandelbrot and Hudson (2004) explain, alternative specifications to the Gaussian normal distribution are required. Not only are they required but they are available, so there was no excuse for the obsession with the Gaussian approach.¹¹ Examples to illustrate this argument can be found in the assessment of the failure of Long-Term Capital Management (LTCM) by Jorion (2000) or the analysis of recent financial turmoil by Daniélsson (2008).

Essentially, Jorion and Daniélsson confirm Mandelbrot's long held view that financial data do not conform to the Gaussian random-walk model. As Mandelbrot has consistently pointed out, *financial markets exhibit far wilder randomness* than the mild form implied by the Gaussian model. In particular, Jorion (2000, p. 287) points out that it was well known that financial data exhibited 'fatter tails' than implied by the Gaussian normal distribution and applying the latter would seriously distort the estimates of risk and therefore the capital required to undertake the leveraged strategy employed by LTCM. In short LTCM failed because of its inability to correctly measure its risk and without that ability it was ultimately powerless to manage it. Consequently, LTCM was woefully undercapitalised given a sensible assessment of the risks it was taking. What is revealing about the episode, however, is that it

¹⁰ For a formal statement of the auction see Ljungqvist and Sargent (2004, p. 217). Clower (1999) provides a damning critique of monetary and finance theory based on this approach but his complaints fell on deaf ears as is evidenced by Buiter's restatement of some of Clower's complaints. For an approach to finance and liquidity that starts by asking the right questions see Tirole (2002, p. 54 emphasis added) who also explains what has gone wrong: "But what is 'liquidity'? Does liquidity matter and should governments and central banks do something about it? *While trivial to a practitioner, these questions surprisingly are not so obvious to an economist trained in the general-equilibrium tradition.* Intuitively, an industrial company or financial institution is short of liquidity when a) some spending decisions are worthwhile, and b) the firm somehow cannot manage to find the money to finance them. Classical (Arrow-Debreu, Modigliani-Miller) economic theory holds that a) and b) are inconsistent; if refinancing or financing of new projects is desirable, so goes the argument, the firm can always issue claims on associated future profits, that investors will find sufficiently attractive to be willing to finance the outlay. According to this logic, firms have no reason to plan their liquidity (or for that matter to engage in risk management to avoid bad surprises in their liquidity position): they just can return to the capital markets as needs arise." This is a clear explanation of the muddled thinking that results from the unquestioned belief that financial markets can replicate the results of the Arrow-Debreu or time-0 auction.

¹¹ Mandelbrot and Hudson (2004, p. 15) note that using statistical models with non-constant variance amount to no more than patches on a flawed model.

exposed the fundamental flaws in the ‘conventional wisdom’ underpinning much of the market and regulatory practice of the time. Yet these lessons were not taken on board, as many thought the business cycle had achieved a new period of tranquillity – the ‘great moderation’ – as a result of the consensus approach to monetary policy. In fact the problems simply got bigger. The risks in financial markets caused by extreme events as measured by their Gaussian standard deviation have also suffered from ‘inflation’ since 1998.

At the time of the collapse of LTCM in 1998, analysts were looking at what they called 5 to 8 standard deviation events. Such events only have meaning in non-normal distributions. The probability that they can occur in a Gaussian world is effectively zero. What then are we to make of the statements reported by Daniélsson (2008, p. 2) and attributed to David Viniar, Goldman Sachs’s chief financial officer, that during the recent financial turmoil he had observed 25 standard deviation moves several days in a row! As Daniélsson comments, such an interpretation can only imply an error in the estimation of standard deviation as it is equivalent to the claim that an event that we would expect to see once in 14 universes occurred three days in a row (the current universe has a life so far of 10^{10}). Clearly the models had failed – the numbers they generate are meaningless.

Thus on two fronts - economic theory and the statistical models used to measure risk - theorists have failed regulators and policy makers when they were most needed. The consensus model of monetary policy has resulted in too narrow a focus on inflation targeting at the expense of other policy objectives essential to macroeconomic stability and the use of the Gaussian model has then led to a gross underestimation of risk in financial markets. The limitations of the latter approach were exposed by the failure of LTCM but the lessons were not learnt. The current global financial meltdown is the result. The belief in efficient markets and the associated random-walk view of financial markets is nothing more than a mirage – at best a special case of limited use to regulators and policy makers. The tragedy is that the same mirage existed in the minds of economists who populated the IMF.

4. The failure to manage the global monetary system – the role of the IMF

The failure of the IMF during the Asian crisis of 1997-98 has been well documented by Stiglitz (2003). Stiglitz accused the IMF of both preparing the groundwork for a crisis by advocating the free mobility of capital when SE Asia was effectively pegging to the US dollar, and when the crisis struck, of making the wrong diagnosis and consequently of proposing the wrong medicine. Certainly imposing restrictive monetary and fiscal policies on economies going into recession did not instil confidence, a problem made worse when loose talk about bad banks led to bank runs in Indonesia. It is little wonder that IMF advice is now taken with a large pinch of salt in SE Asia. But worse was to come.

In response to that crisis, Asian economies stabilised their exchange rates at undervalued levels relative to the US dollar and proceeded to run large trade and current account surpluses. China had embarked on that strategy in 1994 and it might be argued had thereby contributed to the Asian crisis by undermining the competitiveness of other Asian economies, particularly those that were pegging to the US dollar.¹² A sharp appreciation of the dollar in 1996 was

¹² The unilateral devaluation by China, and the consequent ‘devaluations’ by Asian economies during the Asian crisis of 1997 were, between them, largely responsible for the collapse in Japanese competitiveness in the 1990s. These devaluations followed over a decade of continuous appreciation of the Yen against the US dollar that ultimately placed Japanese industry under increasing competitive pressure – See McKinnon and Ono (1997). The Asian devaluations after the bursting of the commercial property and stock market bubble in the early 1990s effectively drove Japan into the liquidity trap by pushing the marginal efficiency of capital into negative territory. During this period Japanese growth stagnated as investment was largely directed off-shore.

enough to tip some of these Asian economies into trade and current account deficits that set off speculative attacks on their currencies in a world of free financial capital movements and soft pegs to the US dollar. In any event, the post-crisis response of SE Asian economies was to re-peg (softly) to the US dollar at undervalued exchange rates so as to accumulate foreign exchange reserves as insurance against a repeat of the speculative attacks on their currencies that occurred in 1997 – McKinnon and Schnabl (2004). The exchange rates and foreign exchange reserve accumulations are illustrated in Figures 1 and 2. Figure 1 shows the exchange rate policies followed by several Asian economies and Figure 2 illustrates the excessive rise in foreign exchange reserves that these policies produced. By taking this defensive action several Asian economies inadvertently followed China's export-led growth strategy but by so doing they engaged in actions that have destabilised the global monetary system and contributed to the global financial tsunami that is now washing back on them (and us). All the while under the very nose of IMF exchange rate surveillance!

The net result of IMF 'surveillance' is that massive trading imbalances built up between the United States and Asian economies of which China is the most talked about. Many economists, including those at the IMF, have expressed concern about the sustainability of these imbalances and conjectured that they would ultimately result in a run on the US dollar forcing up US interest rates and generating a US recession. But the damage done by the trade imbalances between the US and Asia comes from the distortion to US and global interest rates that it has engendered and not from a threat of a run on the US dollar. Instead, as the global economy is on a *de facto* US dollar standard, the sharp rise in liquidity preference in the current crisis has seen an increased demand for US dollars and US dollar denominated assets. Combined with the rush into safe assets as the credit crisis unfolded, the yields on US Treasury bills have been forced almost to zero suggesting that the US is now also flirting with a liquidity trap – see Figure 3.¹³

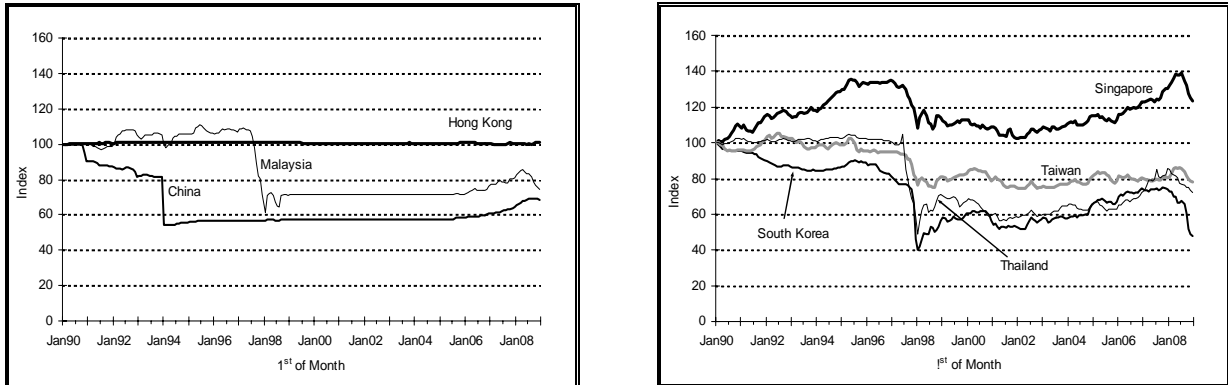
A similar effect on global liquidity and 'easy credit' has been generated by the fact that Japan has been languishing in a liquidity trap since the mid 1990s. Like the Asian surpluses Japan's liquidity trap depressed global nominal and real rates (in a low inflation environment) and these low rates in turn fed the binge of securitisation and leverage in 'deregulated' western economies that we have observed over the last decade or more.¹⁴ Recycling of Asian surpluses and the Yen carry trade fed a flood of liquidity onto the global 'wholesale' market and also induced 'slippage' in the effectiveness of monetary policy in economies with free capital mobility. Monetary policy in the US was the most obviously affected although Greenspan kept interest rates too low too long after the dot-com bust. For a devastating critique of the Greenspan era see Fleckenstein (2008). Effectively the foundations of the US bubble economy were supported by the 'structural' flaw embedded in the global monetary system by the IMF. The distortion of global interest rates is illustrated in Figure 4.3 which illustrates Japan's liquidity trap, the movements in US interest rates and Australian interest rates for comparison.¹⁵ The fact that the world's second largest economy has been floundering in a liquidity trap for over a decade is a symptom of a sick international monetary system. The fact that the US is about to join it is a symptom that the disease is spreading. Some effective medication is required.

¹³ Some estimates suggest that with the effective Federal Funds rate at 0.4 percent the US has joined Japan in a liquidity trap.

¹⁴ Many economists, including Ben Bernanke, incorrectly ascribed these low real interest rates to a global savings glut. But this classical theory of the rate of interest is incoherent as Keynes (1936) explained. See also Bibow (2001). Low global interest rates were caused by misaligned Asian exchange rates and rising foreign exchange reserves which with Japan's liquidity trap and zero interest rates both generated a flow of funds into US Treasuries and other assets depressing their yields.

¹⁵ The Yen carry trade is the practice of borrowing Yen at low interest rates and using the funds to buy Australian dollar assets thereby profiting from the interest differential (exchange risk is an issue that also comes into play). The fact that a series of 12 interest rate increases failed to stop inflationary pressure in Australia is partly explained by the free availability of funds on the global 'wholesale' market as a result of the Yen carry trade and the Asian surpluses.

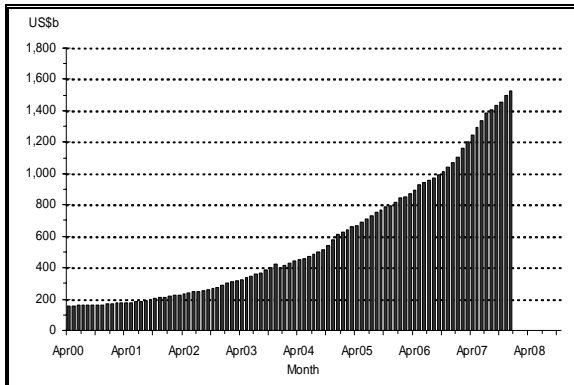
Figure 1
Selected \$US/Asian Exchange Rates
 Index January 1990=100.0



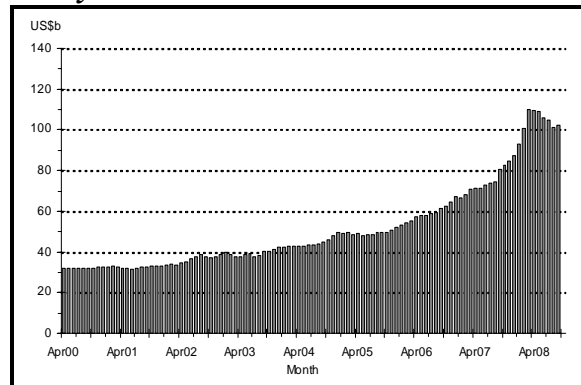
Source: Federal Reserve Bank of St Louis, Federal Reserve Bank of New York.

Figure 2
Accumulation of foreign exchange reserves for some Asian countries

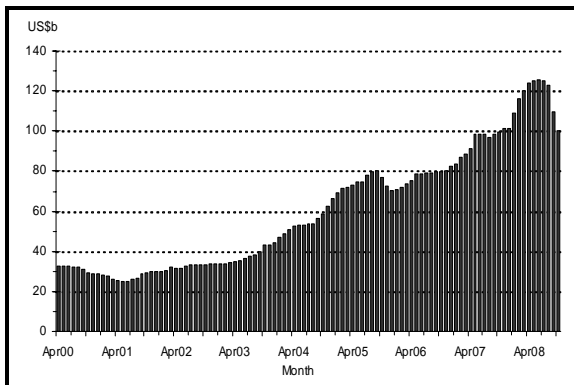
China



Malaysia

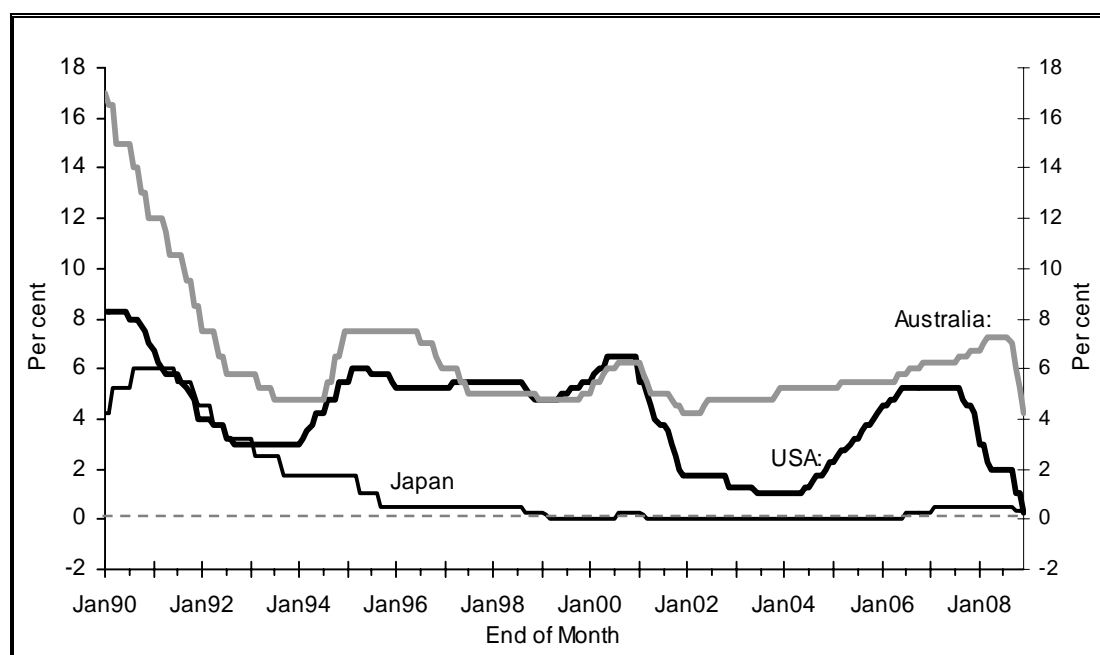


Thailand



Source: IMF, People's Bank of China.

Figure 3
Policy interest rates for Australia, Japan and the United States



Source: Reserve Bank of Australia, Board of Governors of the Federal Reserve System.

Few economists have noticed this problem but one who has is Michael Mussa (2007). Mussa is a former chief economist at the IMF but he has offered a scathing critique of the IMF's failure to implement the Articles of Agreement over the past decade or more. Essentially he has accused several IMF directors and staff of misconduct for failing to implement or enforce its Articles of Agreement. In a technical sense he is right but the failure extends beyond the Directors and economists at the IMF back to their political masters in the United States and Europe. The United States' interest in international organisations like the United Nations, IMF and World Bank has waned in recent decades, particularly under Republican presidents. Of the international economic institutions it is fair to say that the IMF has fared worst. After re-inventing itself in the 1970s it managed several successful Latin American bailouts in the 1980s while proceeding to antagonise many governments in developing economies by imposing strict 'conditionality' conditions. As we have seen, it also pushed strongly for the liberalization of financial capital flows in the 1990s and succeeded in antagonising the SE Asian economies in the 1997-98 crisis. With the rise of the 'Washington consensus' in 2000, funding of the IMF was increasingly questioned in the US on the grounds that the world would be better off without an institution that encouraged moral hazard, and the US administration treated international institutions with benign neglect. It is in that context that European Directors of the IMF lost focus as they had no role to play in what amounted to a moribund global monetary system.

But as Mussa (2007, p. 37, emphasis added) explains, this benign neglect is reckless in the extreme.

"The notion that [the international monetary] system can always be relied upon to work perfectly smoothly on its own, and individual nations safely be allowed to distort and disrupt the operation [of the] system in whatever manner they choose, without any official oversight from a competent international institution backed by the will of the international community is, to put it bluntly, *a gross stupidity*."

As you might have guessed the theoretical basis for this neglect is to be found in the same model that has led to the distortion in economists thinking about money and financial markets. It also enables us to evaluate competing claims about what should be done to repair global and domestic monetary and financial systems.

5. The remedies

At the time of writing, the G 20 summit has come and gone and the US, UK and China have announced unprecedented stimulus packages in the old Keynesian style as have numerous other governments. Clearly these packages together with the financial bailouts will mitigate but not avoid a global recession in 2009. The focus of this paper is not on these short-term measures but is concerned with the long-term and fundamental reforms that are required to put the global monetary and financial system back on a stable trajectory. There is already a raft of suggestions on what to do to stabilize the global economy and fix the financial system – see Eichengreen and Baldwin (2008). There is also a rising tide of calls for increased regulation or regulatory reform of financial markets as in Shiller's (2008) call for the 'democratization of finance'. There is no doubt much merit in many of these proposals. However, without a coherent theoretical framework it is difficult to sift the wheat from the chaff and there is a risk that 'reforms' will do little more than paper over the cracks in an unsound structure when fundamental structural changes are needed. The following discussion will therefore outline some basic principles that should be considered when contemplating the structural reforms needed to stabilise global and domestic monetary and financial systems. This is an ambitious task that faces many political hurdles. But without the attempt to move in this direction the global economy will not achieve its potential.

First, the global monetary system of interlocking currencies and exchange rates cannot be left to manage itself, as Mussa so forcefully reminded us. We do not need to be as caustic as Mussa but the fact is that economic theory provides no basis for the belief that freely floating exchange rates for all currencies will do the job - but neither does it support the belief that exchange rates can be permanently fixed. That inevitably means that the system of exchange rates must be managed and, of course, that also means that it may be mismanaged. What many economists have failed to realise is that these are the only options – management and mismanagement.¹⁶ Belief that exchange rates can be placed on automatic pilot and left to find their fundamental equilibrium values is just that – belief with no basis in economic theory. Over the past 100 years the international community has often held such strong but mistaken beliefs and they invariably induced mismanagement – so perhaps it is time to take the management role seriously.

In the current crisis, calls have again emerged for a return to the gold standard. But these calls are misguided. As scholars of the gold standard have pointed out, it was anything but an automatic system and required some special conditions to hold if it were to be managed successfully. Failure to appreciate that led to disaster when the world attempted to return to gold after WW I.¹⁷ By contrast, the Bretton Woods system was an attempt to design a management system – a set of rules – that would avoid both exchange rate or financial market turmoil, and the commodity speculation of the 1920s and the global depression of the 1930s. Unfortunately, key elements of the plan proposed by Keynes never made it into the Bretton

¹⁶ Those who believe that the current system is not being 'managed' in some form or other are deceiving themselves. The international monetary system is a mishmash of exchange rate regimes consisting of managed floats, currency boards and currency unions. In each case some element of management is required. Furthermore, from time to time key central banks are called on to coordinate intervention in foreign exchange markets.

¹⁷ See Eichengreen (1992).

Woods scheme. In particular, the scheme as implemented meant that all the pressure for adjustment was placed on deficit countries and thereby imparted downward pressure on global growth. Furthermore, the gold exchange foundation of the Bretton Woods system was bound to fail at some point particularly as the success of the reconstruction of Europe and Asia flooded the world with US dollars and the accumulation of US dollar reserves by surplus countries led to increasing pressure on gold conversion. Faced with a drain on gold reserves Nixon cut convertibility of the US dollar to gold in 1971. That left the global economy on a *de facto* US dollar standard but without any commitment by the US Federal reserve to global financial stability except to the extent that that such stability usually aligned with the US national interest.

Coincidentally, since the collapse of the Bretton Woods system the role of the IMF has been in limbo. It cannot act as a global central bank because it lacks the mandate and the means and, as a consequence of its misguided interventions, particularly in the Asian crisis, it has lost credibility in that part of the world that is growing most rapidly. This is unfortunate and will hamper the reform of the international monetary system that many economists and governments are calling for. Nevertheless, that reform will be required as a necessary step to improving global economic performance. In particular it is a prerequisite to a general agreement on free trade because without high employment around the globe protectionist sentiment will dominate. The key question is what can be done now?

The place to start would be to revisit the objectives that lay behind the Bretton Woods system as these were motivated by the same financial and foreign exchange market instability that we have witnessed over the past two decades and in the recent crisis. The fundamental principle is that *financial and foreign exchange markets are fragile and potentially unstable*; as Walter Bagehot (1870) realised such monetary and financial systems require '*management with discretion*'. This is easier said than done but there is no alternative.

The first important principle is an element of the Keynes' Plan that didn't make it into the Bretton Woods scheme – the need for symmetrical adjustment between deficit and surplus countries as a means of preventing the sort of global imbalances that have built up over the last decade. As we have seen above, the failure of this feature in the current mismanaged system has contributed substantially to global financial instability as the presence of payments imbalances meant that *Asian surpluses have depressed global interest rates and added fuel to an ultimately unsustainable credit bubble over the last decade*. As usual the devil is in the detail when attempting to implement such management schemes but there are proposals available that provide the basis for discussion. See for example the proposals by Davidson (2002, 2007), Stiglitz (2001) and some of the contributors to Eichengreen and Baldwin (2008). The more difficult part in implementing these reforms would be to restore the credibility of the IMF and broaden representation on the board to better reflect current economic reality. There are calls for moves in this direction but they may not be heeded unless the global economy slips into a serious recession or depression. Nevertheless, reform of the global monetary system is necessary to put the global economy on a more stable long-term footing.

Another important principle relates to the free mobility of capital between economies. As Tirole (2002) noted, the consensus view that free capital mobility between countries was unambiguously good was shattered by the Asian crisis. Again, it seems that the economic theory behind this consensus has proven to be faulty. Classical economic theory suggests that capital, in the form of fixed investment, should flow to where it earns the highest return and this will usually mean that it flows from high to low income economies, ultimately lifting the

incomes and standard of living in low income economies. This is unambiguously good. What is not unambiguously good is the rapid outflow of financial capital from debtor developing countries who cannot hedge the unavoidable currency and maturity mismatches – the consequences are often unambiguously bad. As we pointed out above, the failure to manage financial markets with discretion – ‘free-market ideology’ – is based on flawed theory and statistical analysis. There is simply no theoretical basis for the belief that the uninhibited flow of financial capital, domestically or internationally, will produce the efficient trade and investment flows that could be expected in an Arrow-Debreu economy (i.e. in a world in which exchange is costless), or indeed in a more general model where the role of money and credit acts only to reduce transactions costs and stimulate trade. Yet this is the vision that lies behind the presumption that unregulated interaction of individuals in private markets is welfare enhancing. Financial ‘markets’ allowed to operate on the basis of that belief are *potentially unstable and hence inherently risky* – and from a Gaussian perspective they will generate what appear to be an abnormal number of extreme events. As Goodhart (2008) or Mandelbrot and Hudson (2004) point out there is still a stubborn refusal to face these facts on the part of many theorists.

This suggests that some form of regulation of international financial flows will be required and these regulations will need to apply globally in a uniform fashion, be compatible with domestic regulations and be flexible. This is a tall order but is not unachievable in a manner that allows a fair degree of flexibility for governments – so long as that flexibility does not extend to actions that undermine the stability of the global monetary system as has almost occurred under the present non-system.

Turning to the matter of domestic monetary policy it seems clear that central banks need to refocus monetary policy on all the core objectives written into their mandates – inflation targeting is too narrow a mandate and clearly not sufficient to ensure macroeconomic stability.¹⁸ This is not too difficult a task but it may require a reassessment of the lines of responsibility between the multitudes of financial market regulators that have grown up over the last three decades. Clear lines of responsibility for monetary and financial stability need to be drawn to central banks and treasuries. Also, clear responsibility for the prevention of asset-price bubbles needs to be addressed. The question is not whether to burst bubbles or not but how to prevent them from arising in the first place.¹⁹ And, if that fails, to tackle them sooner rather than later using instruments other than the interest rate. Ultimately the state is responsible for the stability of money and financial markets in state-money systems and this is effectively the system that now exists. An important issue here is the question of moral hazard – the fact that governments stand behind key financial institutions that are too big or important to fail and that this induces risk taking behaviour on their part. This is a problem that cannot be eliminated – it can only be mitigated. And it can only be mitigated by realising that it is an unavoidable consequence of collective action. If we are to live in democratic societies and delegate to governments and institutions like the central bank the management of collective action in the public interest, the process is always open to abuse. We deal with that possibility by holding periodic elections, relying on a free press to expose abuse and enshrining notions of fairness and equity in law. What more can be done?

Finally, that brings us to the changes required in the theory of money and finance. If Goodhart and others are right, (and there is no doubt they are) mainstream monetary theory has run off the rails and has little to offer in the way of sensible policy advice. Similarly, the

¹⁸ See Palley (2002), White (2006), Goodhart (2004) and Arestis and Sawyer (2005)

¹⁹ The two sides to the debate about asset-price bubbles is presented by Posen (2006) and Roubini (2006).

statistical analysis based on the Gaussian approach has proven to be an unreliable guide to the measurement of risk in financial markets. In both cases the fault lies with the reliance on special cases that do not fit the facts – a relatively simple failure that, in principle, should be easy to correct. In practice, if the history of ideas in economics is any guide, it is likely to meet with considerable resistance. Nevertheless, what is required is a change in focus along the lines suggested by Buiter (2008, p. 31, fn 9, emphasis added):

Much of macroeconomic [and monetary] theorising of the past 30 years looks like a self-indulgent working and re-working to death of an uninteresting and practically unimportant special case. *Instead of starting from the premise that markets are complete unless there are strong reasons for assuming otherwise, it would have been better to start from the position that markets don't exist unless very special institutional and informational conditions are satisfied.* We would have a different, and quite possibly more relevant, economics if we had started from markets as the exception rather than the rule, and had paid equal attention to alternative formal and informal mechanisms for organising and coordinating economic activity. *My personal view is that over the past 30 years we have had rather too much Merton (1990) and too little Minsky (1982) in our thinking about the roles of money and finance in the business cycle.*”

Here Buiter has put his finger on the flaws in contemporary monetary theory sketched in section 3 above. Monetary theorists have in fact no general theory of markets – what they have is a special and practically uninteresting form of auction that, while convenient for analytical tractability, actually empties the theory of anything of interest to policy makers or regulators. That partly explains the failure of the efficient markets approach to money and finance. But in addition the Gaussian approach to probability has led both financial institutions and regulators to badly underestimate the risk underlying the process of securitization and trading derivatives. To some extent the estimate of risk can be improved by abandoning the Gaussian approach. But that still leaves uncertainty – the inability to quantify future events in an evolving economy. Any reform of regulation needs to be framed with that in mind.

6. Concluding remarks

The current economic crisis is a wake-up call to theorists, regulators and policy makers as the ultimate cause of the crisis is a failure at the heart of the received theory of money and finance. The belief that potentially fragile and unstable financial markets can be safely left in the hands of rational agents to self-regulate in the public interest is, to repeat Mussa's warning, a gross stupidity. Greenspan's 'free market ideology' is indeed fatally flawed. As Walter Bagehot realised over 100 years ago, highly efficient but fragile and potentially unstable financial systems need to be 'managed with discretion'. But 'management with discretion' is not something that can be reduced to a simple formula or set of rules. It requires a cohort of executives and public servants highly educated in the history of money and financial markets in addition to economic and statistical theory. To the extent that universities have failed to deliver the right mix of skills (another market failure?) they have contributed to the crisis.

All this suggests that a thorough reassessment of some fundamental principles is required and these need to refocus monetary theorists' attention on the work of Minsky (1976, 1982, 1986), Stiglitz (2001) or Soros (2008) rather than that of the New Classical or New Keynesian 'theorists'. Of course, policy makers and regulators cannot wait for theorists to get their house in order. Fortunately, for most practical purposes they do not need to. There is sufficient evidence and appropriate theory available to make the necessary changes to the

focus of domestic regulation of financial systems and monetary policies. The big challenge is posed by the necessary reform to the international monetary system. Without some fundamental reforms to the global monetary system the global economy is destined to repeat the recent boom bust cycle perhaps a decade or two in the future.

To finish on a lighter but still serious note, it is worth repeating and updating a joke sketched by Goodhart (2004, p. 27).

At the time of the Soviet Union, just prior to the collapse of the Berlin Wall, a western visitor is watching an armed forces parade in Red Square. A procession of weapons increasing in power of mass destruction flows past brought up at the rear by a truck with several men in grey suits. "What are they?" asks our visitor. "Economic theorists" comes the reply, which raised the further question "But why?" prompting the cynical explanation, "You should see the devastation that they can achieve".

Goodhart goes on to note the devastation caused to the Soviet Union by the 'bad theory' behind central planning and concludes that fortunately no disasters on that scale were, at least in 2004, affecting developed economies. From today's perspective the joke is not so funny. If we had not all lost so much money it might even raise a laugh. The irony is that both the 'free market ideology' and the belief in central planning both rest on 'theory' and both reflect the inability to see the flaws in that theory.

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